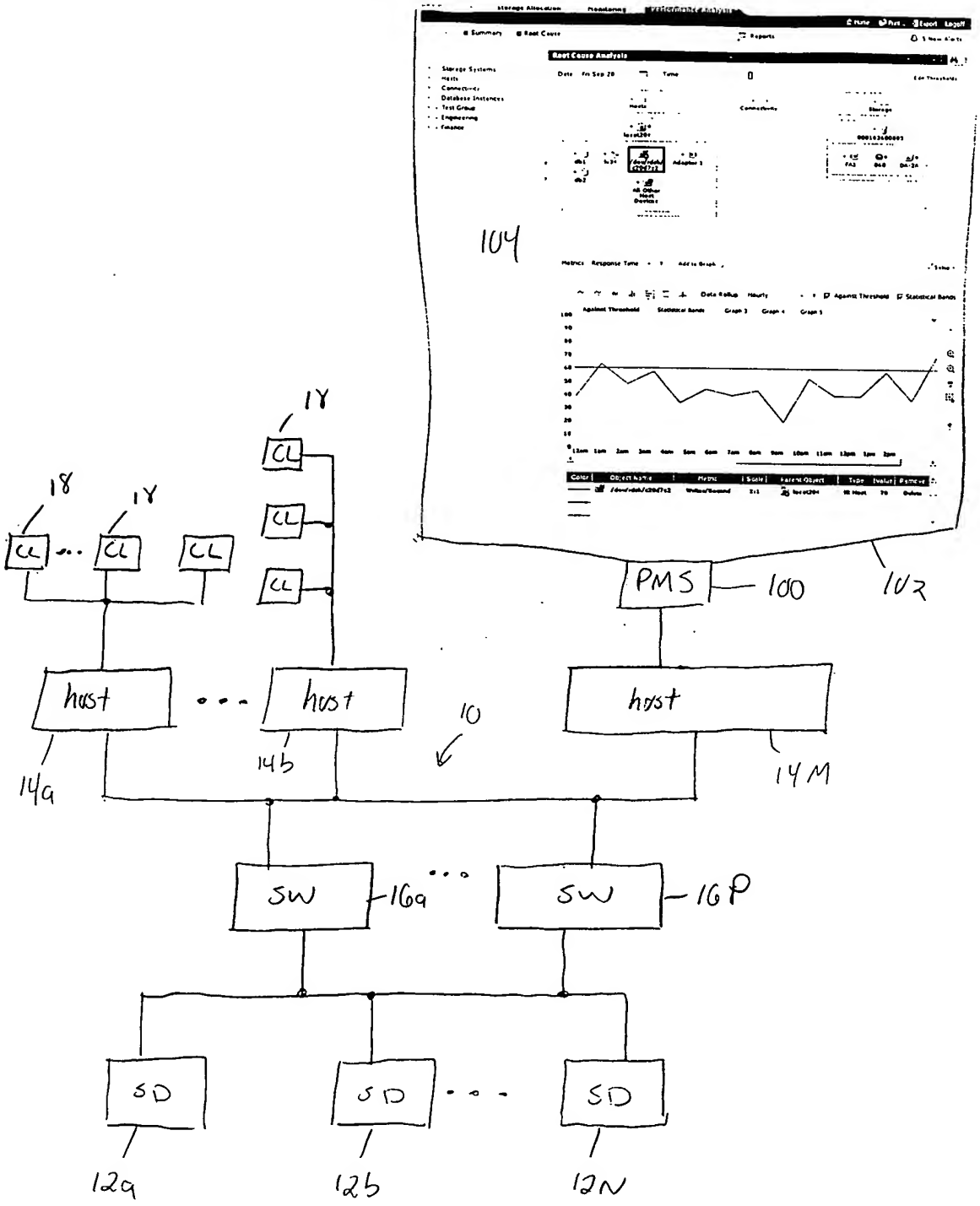

104
PMS
100
102
host
host
host
10
14a
14b
14M
18
1Y
CL
SW
16a
16P
SD
12a
12b
12N

FIG. 1

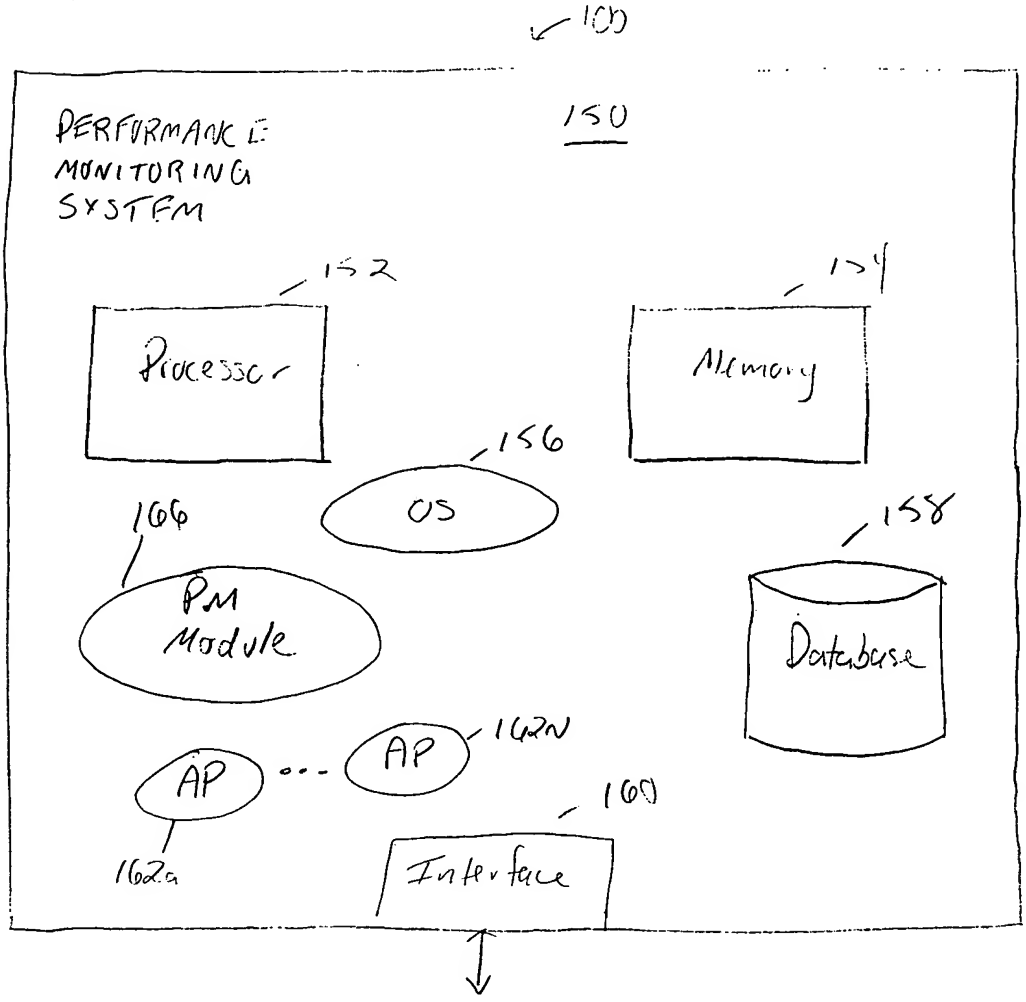

100
PERFORMANCE MONITORING SYSTEM
150
152
Processor
154
Memory
156
OS
158
Database
166
PM Module
AP
AP
162N
160
Interface
162a

FIG. 2

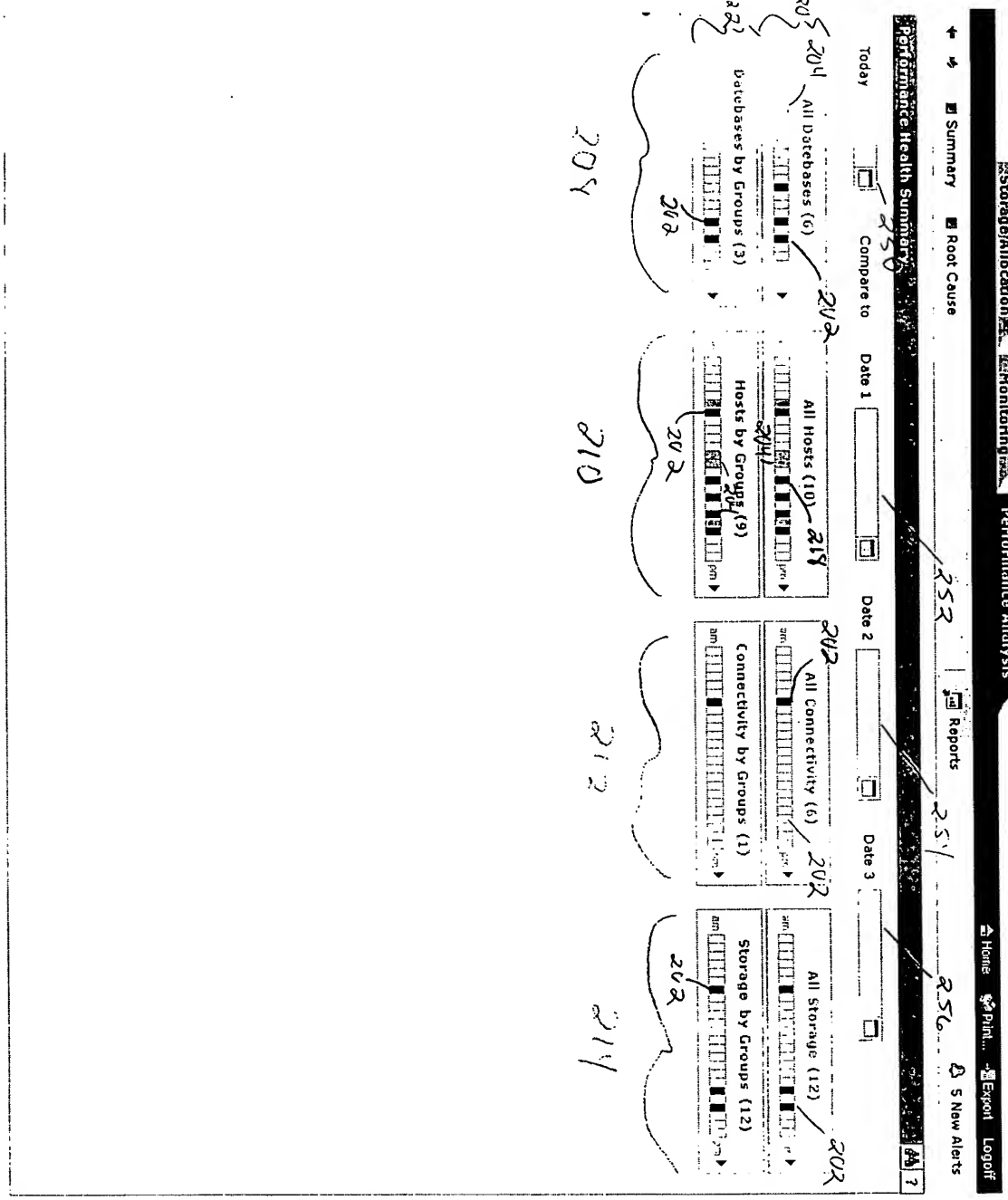

Storage/Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Performance Health Summary
Today
Compare to
Date 1
Date 2
Date 3
All Databases (6)
Databases by Groups (3)
All Hosts (10)
Hosts by Groups (9)
All Connectivity (6)
Connectivity by Groups (1)
All Storage (12)
Storage by Groups (12)
230
232
234
236
200
202
204
206
208
210
212
214
218
220
222

FIG. 3

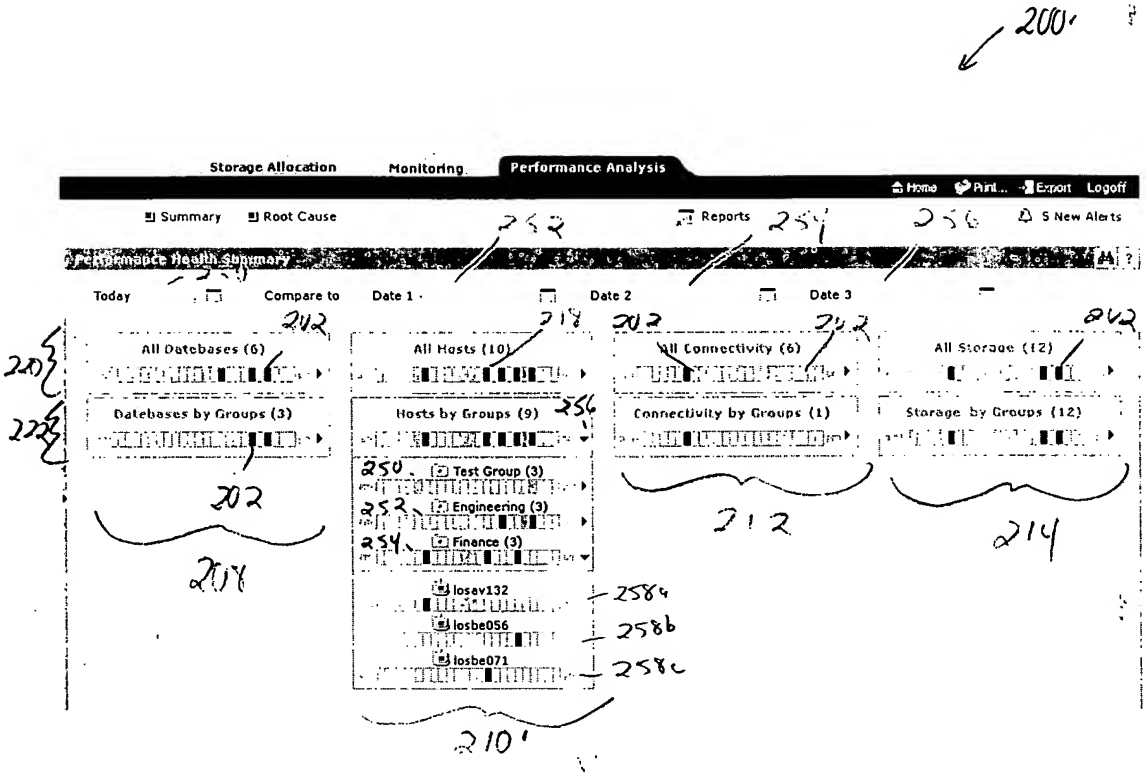

200'
Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Performance Health Summary
Today
Compare to
Date 1
Date 2
Date 3
All Databases (6)
Databases by Groups (3)
All Hosts (10)
Hosts by Groups (9)
Test Group (3)
Engineering (3)
Finance (3)
losav132
losbe056
losbe071
All Connectivity (6)
Connectivity by Groups (1)
All Storage (12)
Storage by Groups (12)
202
204
212
214
210'

FIG. 3A

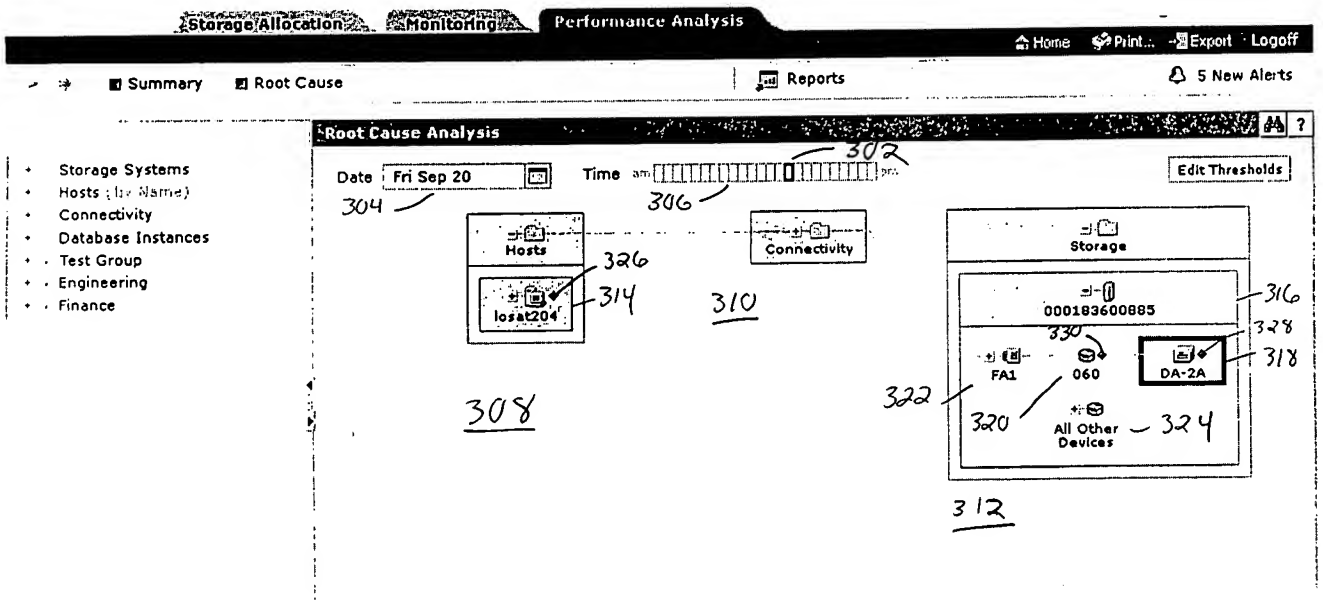

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (by Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
losat204
Connectivity
Storage
000183600885
FA1
060
DA-2A
All Other Devices
300
302
304
306
308
310
312
314
316
318
320
322
324
326
328
330

FIG 4

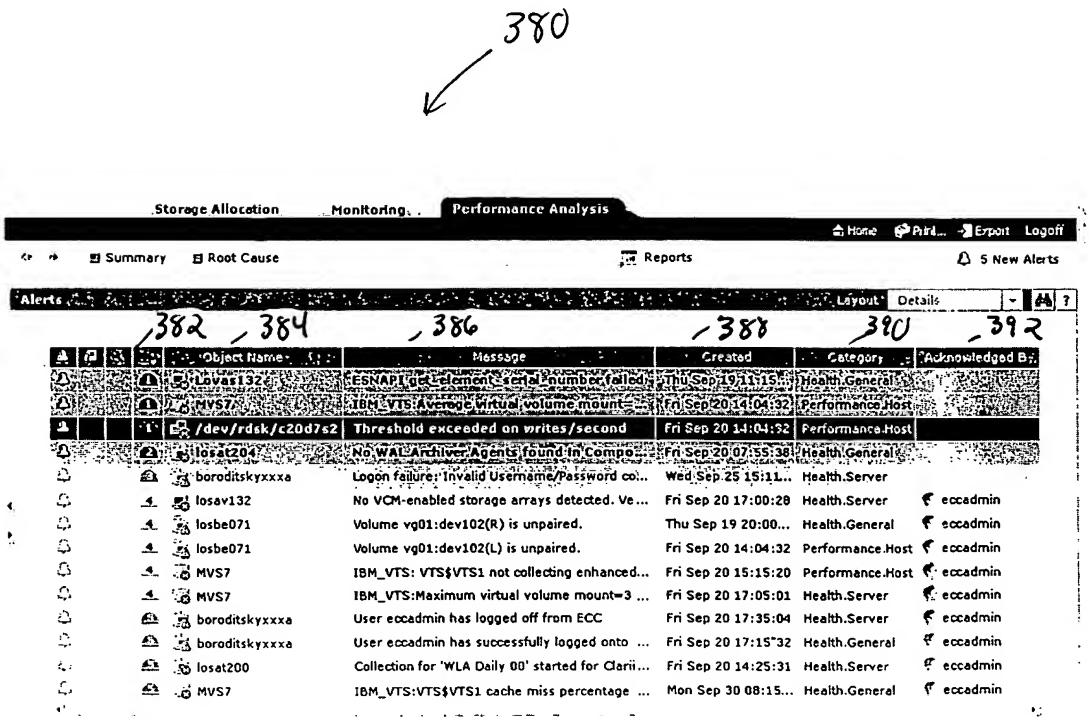

380
Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Alerts
Layout
Details
382
384
386
388
390
392
Object Name
Message
Created
Category
Acknowledged By
Lovas132
ESNAPI.getElement: serial number failed.
Thu Sep 19 11:15...
Health.General
MVS7
IBM_VTS:Average virtual volume mount=...
Fri Sep 20 14:04:32
Performance.Host
/dev/rdsk/c20d7s2
Threshold exceeded on writes/second
Fri Sep 20 14:04:32
Performance.Host
losat204
No WLA Archive Agents found in Compo...
Fri Sep 20 07:55:38
Health.General
boroditskyxxxa
Logon failure: Invalid Username/Password co...
Wed Sep 25 15:11...
Health.Server
losav132
No VCM-enabled storage arrays detected. Ve...
Fri Sep 20 17:00:28
Health.Server
eccadmin
losbe071
Volume vg01:dev102(R) is unpaired.
Thu Sep 19 20:00...
Health.General
eccadmin
losbe071
Volume vg01:dev102(L) is unpaired.
Fri Sep 20 14:04:32
Performance.Host
eccadmin
MVS7
IBM_VTS: VTS$VTS1 not collecting enhanced...
Fri Sep 20 15:15:20
Performance.Host
eccadmin
MVS7
IBM_VTS:Maximum virtual volume mount=3 ...
Fri Sep 20 17:05:01
Health.Server
eccadmin
boroditskyxxxa
User eccadmin has logged off from ECC
Fri Sep 20 17:35:04
Health.Server
eccadmin
boroditskyxxxa
User eccadmin has successfully logged onto ...
Fri Sep 20 17:15:32
Health.General
eccadmin
losat200
Collection for 'WLA Daily 00' started for Clarii...
Fri Sep 20 14:25:31
Health.Server
eccadmin
MVS7
IBM_VTS:VTS$VTS1 cache miss percentage ...
Mon Sep 30 08:15...
Health.General
eccadmin

FIG. 4A

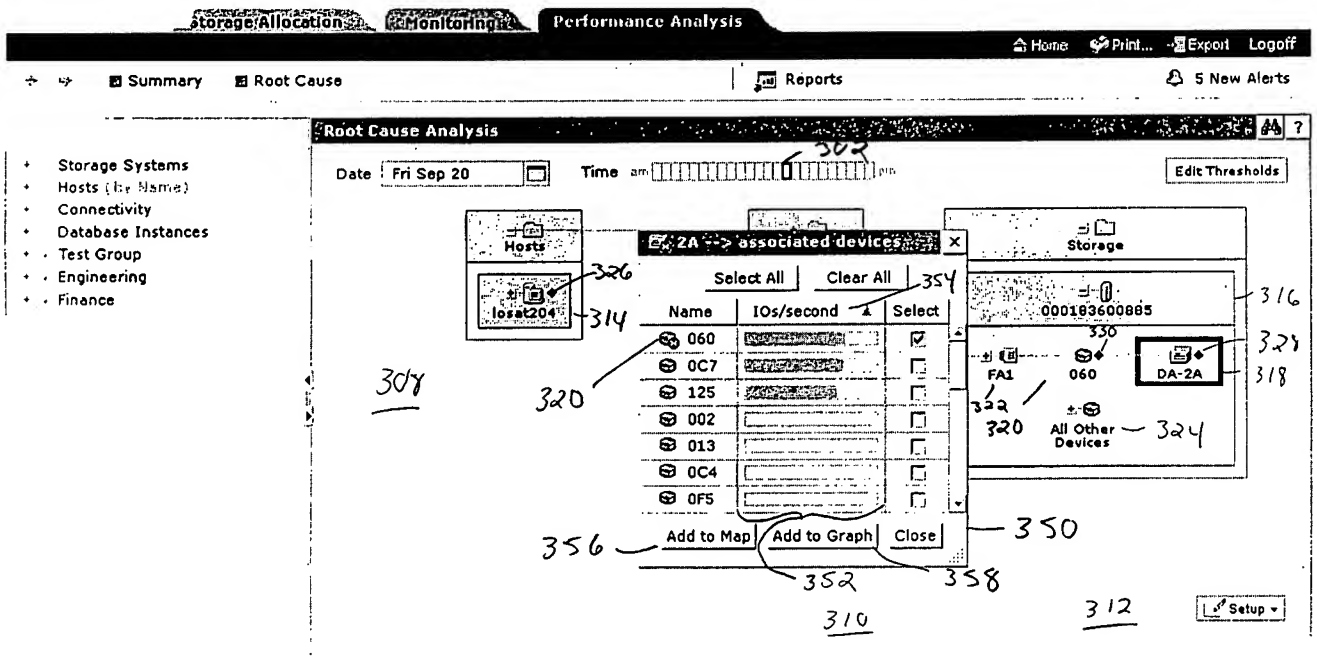

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (By Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
2A --> associated devices
Storage
Select All
Clear All
Name
IOs/second
Select
060
0C7
125
002
013
0C4
0F5
losat204
000183600865
FA1
060
DA-2A
All Other Devices
Add to Map
Add to Graph
Close
Setup
300'
302
304
306
308
310
312
314
316
318
320
322
324
326
330
350
352
354
356
358

FIG 5

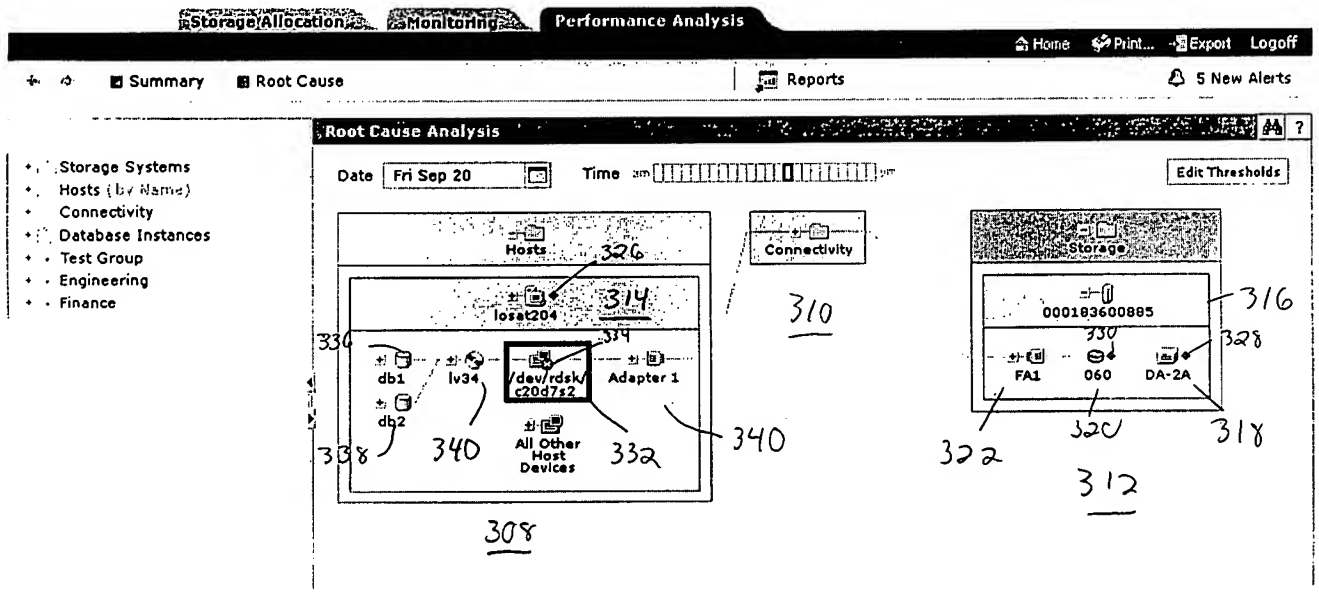

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (by Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
326
losat204
314
db1
db2
lv34
/dev/rdsk/c20d7s2
Adapter 1
All Other Host Devices
330
334
338
340
332
Connectivity
310
Storage
000183600885
316
328
FA1
060
DA-2A
322
320
318
312
308
300"

FIG 6

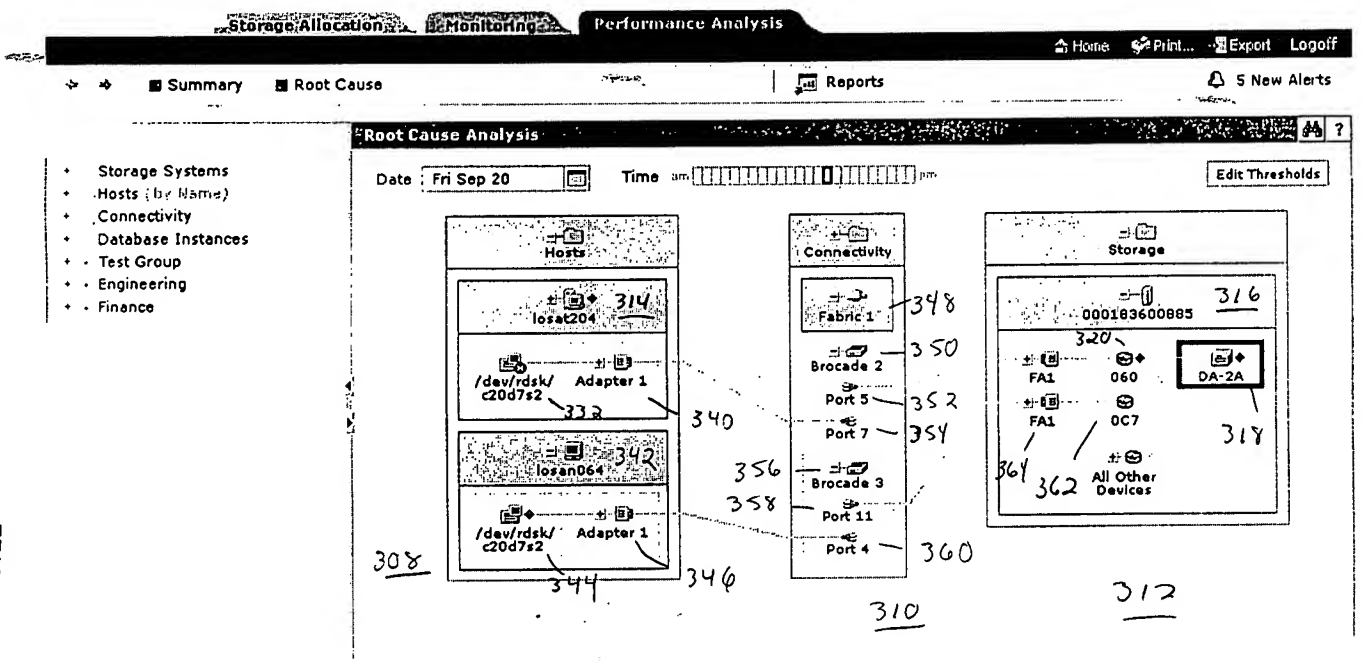

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (by Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Date Fri Sep 20
Time am pm
Edit Thresholds
Hosts
losat204
/dev/rdsk/ c20d7s2
Adapter 1
332
340
342
losan064
/dev/rdsk/ c20d7s2
Adapter 1
344
346
308
314
Connectivity
Fabric 1
348
Brocade 2
350
Port 5
352
Port 7
354
356
Brocade 3
358
Port 11
Port 4
360
310
Storage
000183600885
316
320
FA1
060
DA-2A
318
FA1
0C7
364
362
All Other Devices
312
300'''

FIG. 7

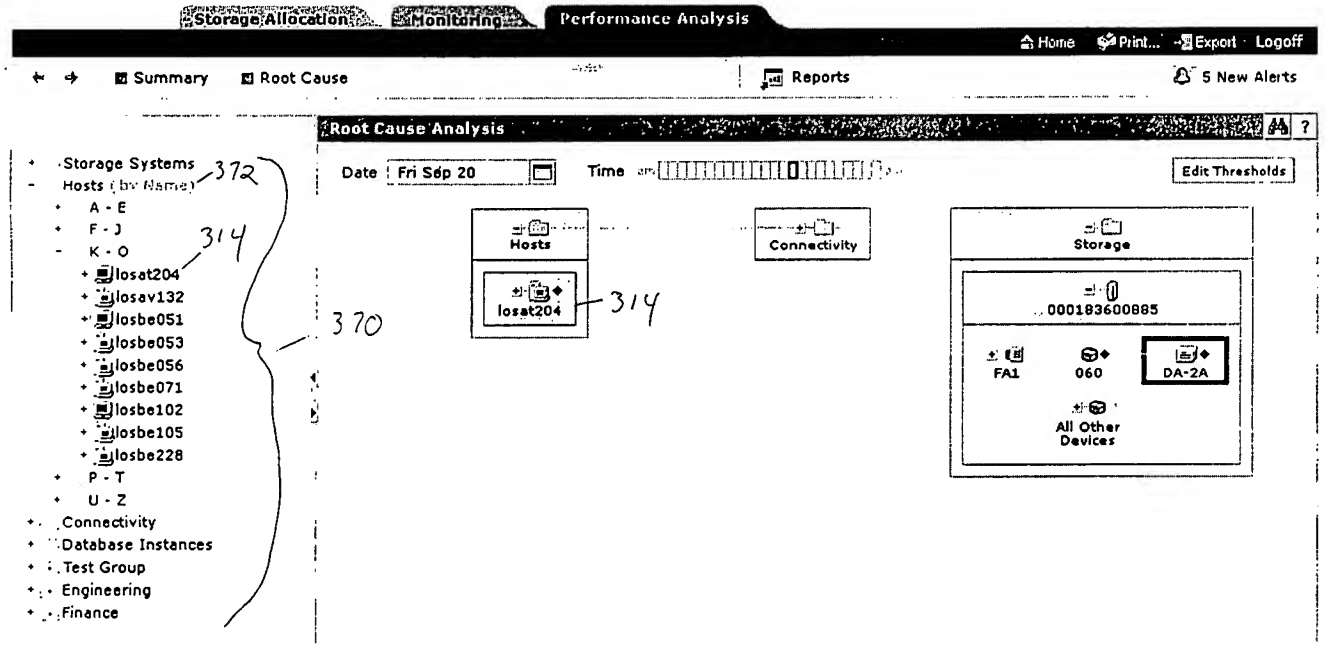
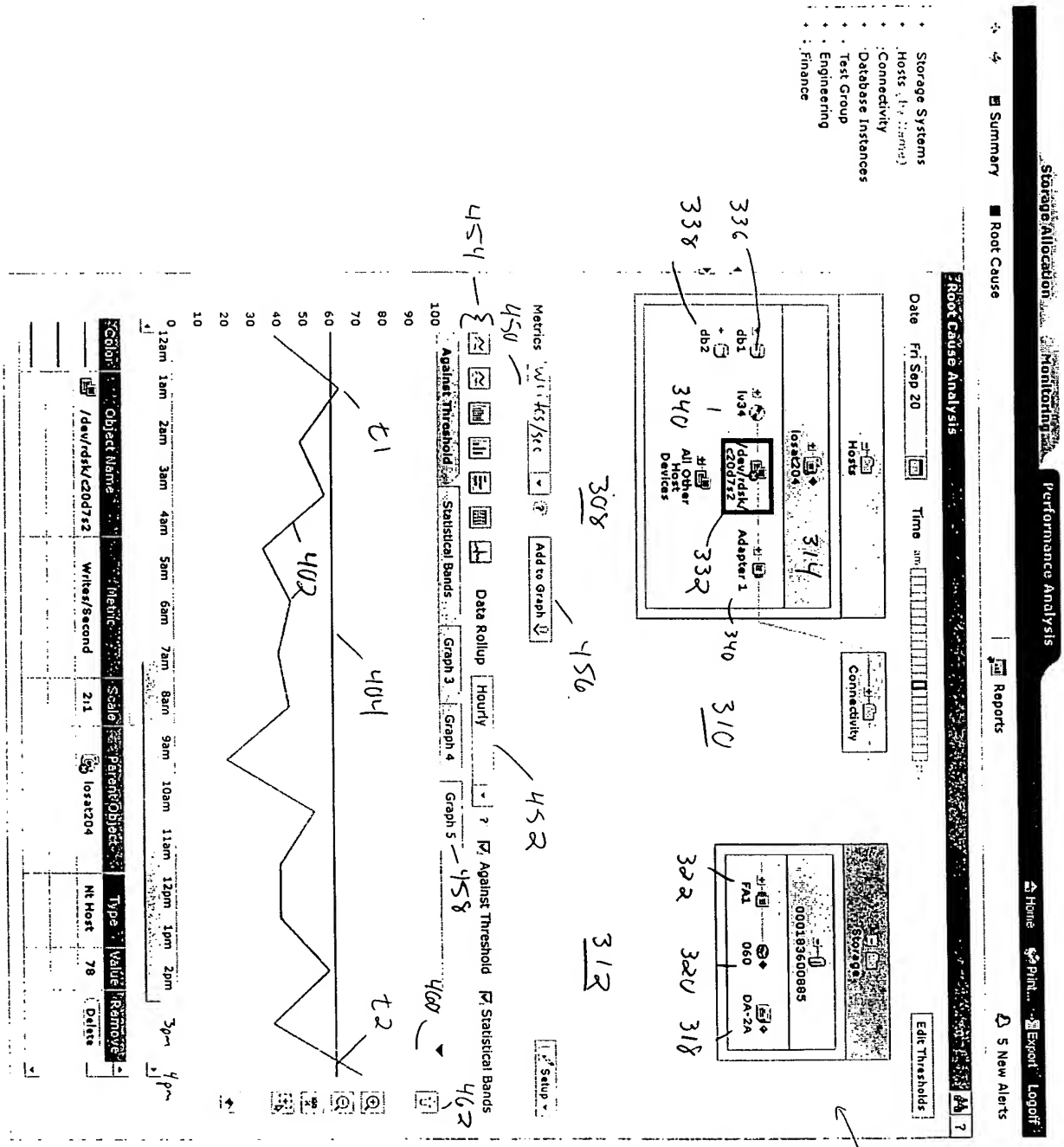

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Storage Systems
Hosts (by Name)
A - E
F - J
K - O
losat204
losav132
losbe051
losbe053
losbe056
losbe071
losbe102
losbe105
losbe228
P - T
U - Z
Connectivity
Database Instances
Test Group
Engineering
Finance
372
314
370
Root Cause Analysis
Date
Fri Sep 20
Time
Edit Thresholds
Hosts
losat204
314
Connectivity
Storage
000183600885
FA1
060
DA-2A
All Other Devices

FIG 8


Storage Allocation
Monitoring
Performance Analysis
Summary
Root Cause
Reports
Home
Print...
Export
Logoff
5 New Alerts
Storage Systems
Hosts
Connectivity
Database Instances
Test Group
Engineering
Finance
Root Cause Analysis
Date Fri Sep 20
Time
Edit Thresholds
Hosts
Connectivity
Storage
000183600985
FA1
060
DA-2A
db1
db2
lv34
lv3
lv4
lv5
lv6
lv7
lv8
lv9
lv10
lv11
lv12
lv13
lv14
lv15
lv16
lv17
lv18
lv19
lv20
lv21
lv22
lv23
lv24
lv25
lv26
lv27
lv28
lv29
lv30
lv31
lv32
lv33
lv34
lv35
lv36
lv37
lv38
lv39
lv40
lv41
lv42

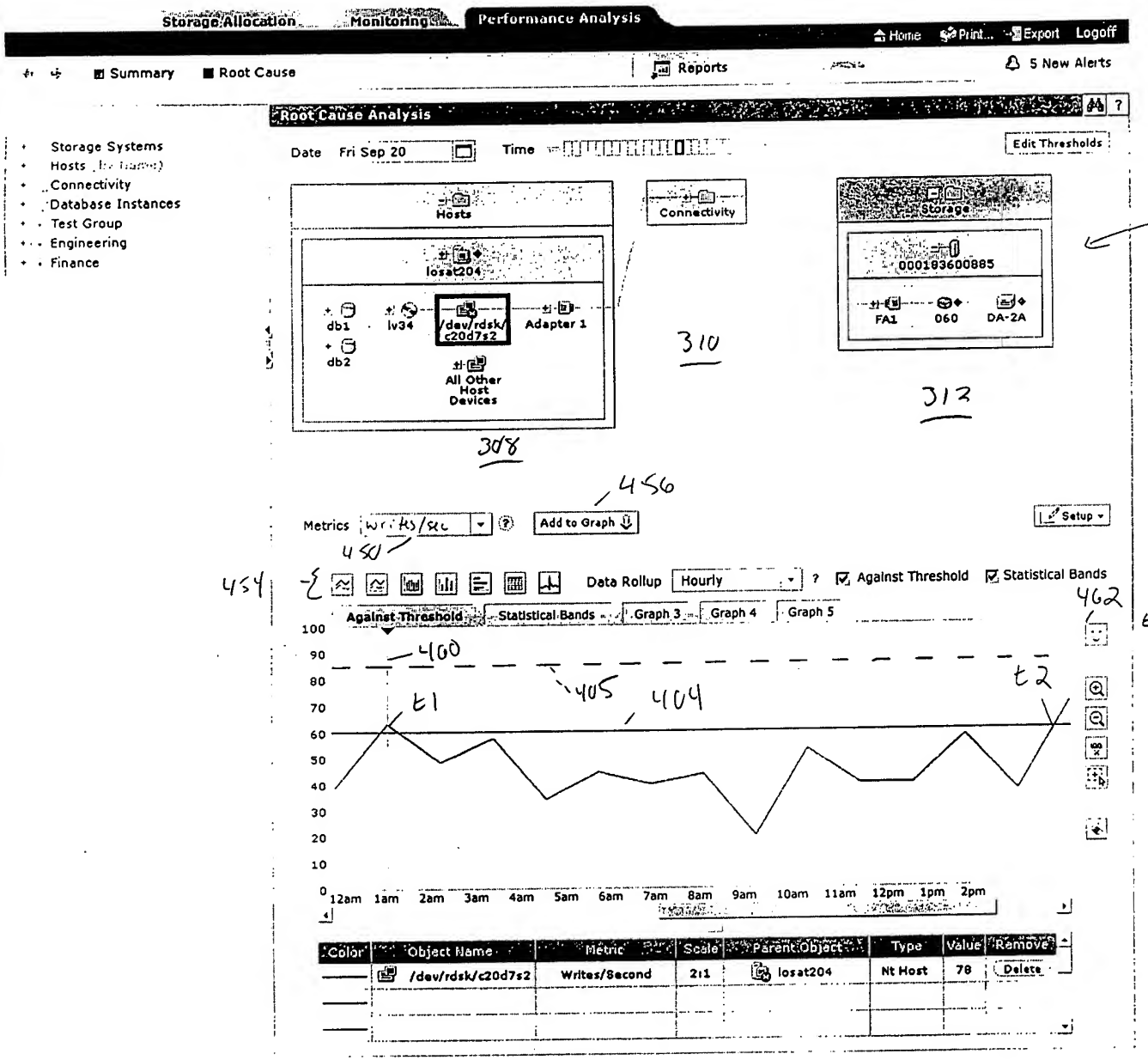

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts
Connectivity
Database Instances
Test Group
Engineering
Finance
Date Fri Sep 20
Time
Edit Thresholds
Hosts
losat204
db1
db2
lv34
/dev/rdsk/c20d7s2
Adapter 1
All Other Host Devices
Connectivity
Storage
000193600885
FA1
060
DA-2A
300
310
312
308
456
450
454
Metrics
Writes/Sec
Add to Graph
Setup
Data Rollup
Hourly
Against Threshold
Statistical Bands
Graph 3
Graph 4
Graph 5
462
400
405
404
t1
t2
100
90
80
70
60
50
40
30
20
10
0
12am 1am 2am 3am 4am 5am 6am 7am 8am 9am 10am 11am 12pm 1pm 2pm
Color
Object Name
Metric
Scale
Parent Object
Type
Value
Remove
/dev/rdsk/c20d7s2
Writes/Second
2:1
losat204
Nt Host
78
Delete

FIG. 9A

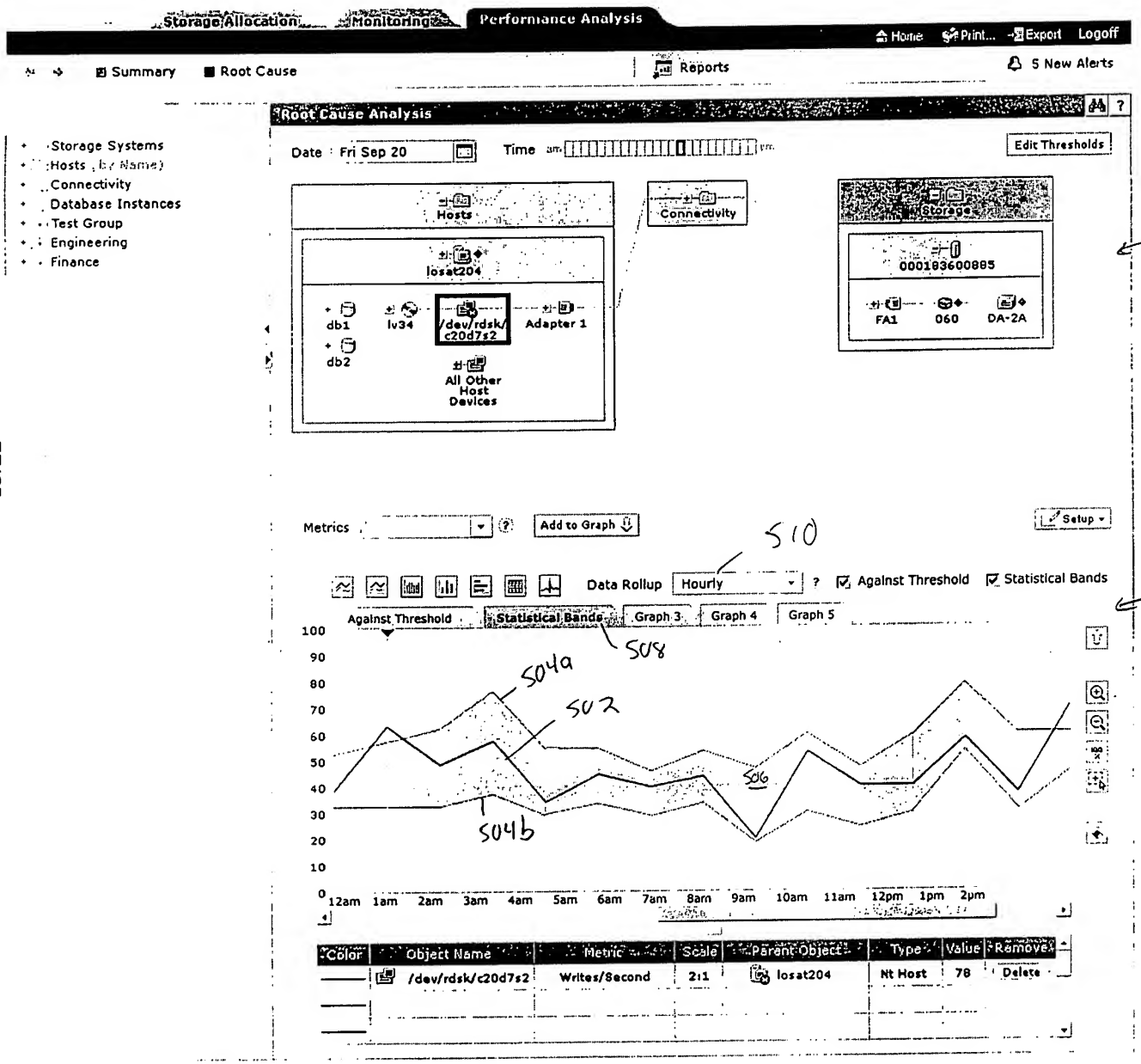

Storage Allocation
Monitoring
Performance Analysis
Home
Print...
Export
Logoff
Summary
Root Cause
Reports
5 New Alerts
Root Cause Analysis
Storage Systems
Hosts (by Name)
Connectivity
Database Instances
Test Group
Engineering
Finance
Date Fri Sep 20
Time
Edit Thresholds
Hosts
Connectivity
Storage
losat204
db1
db2
lv34
/dev/rdsk/c20d7s2
Adapter 1
All Other Host Devices
000183600885
FA1
060
DA-2A
300
Metrics
Add to Graph
Setup
510
Data Rollup
Hourly
Against Threshold
Statistical Bands
500
Against Threshold
Statistical Bands
Graph 3
Graph 4
Graph 5
508
504a
502
504b
506
100
90
80
70
60
50
40
30
20
10
0
12am 1am 2am 3am 4am 5am 6am 7am 8am 9am 10am 11am 12pm 1pm 2pm
Color
Object Name
Metric
Scale
Parent Object
Type
Value
Remove
/dev/rdsk/c20d7s2
Writes/Second
2:1
losat204
Nt Host
78
Delete

FIG 10

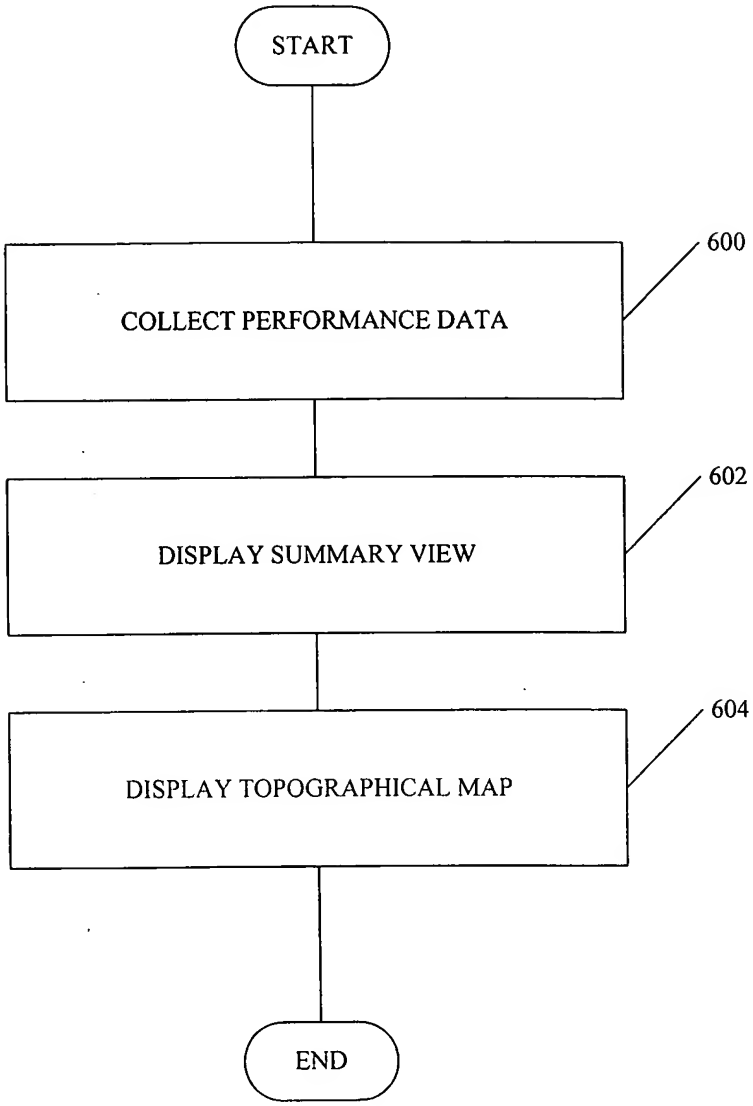

START
COLLECT PERFORMANCE DATA
600
DISPLAY SUMMARY VIEW
602
DISPLAY TOPOGRAPHICAL MAP
604
END

FIG. 11

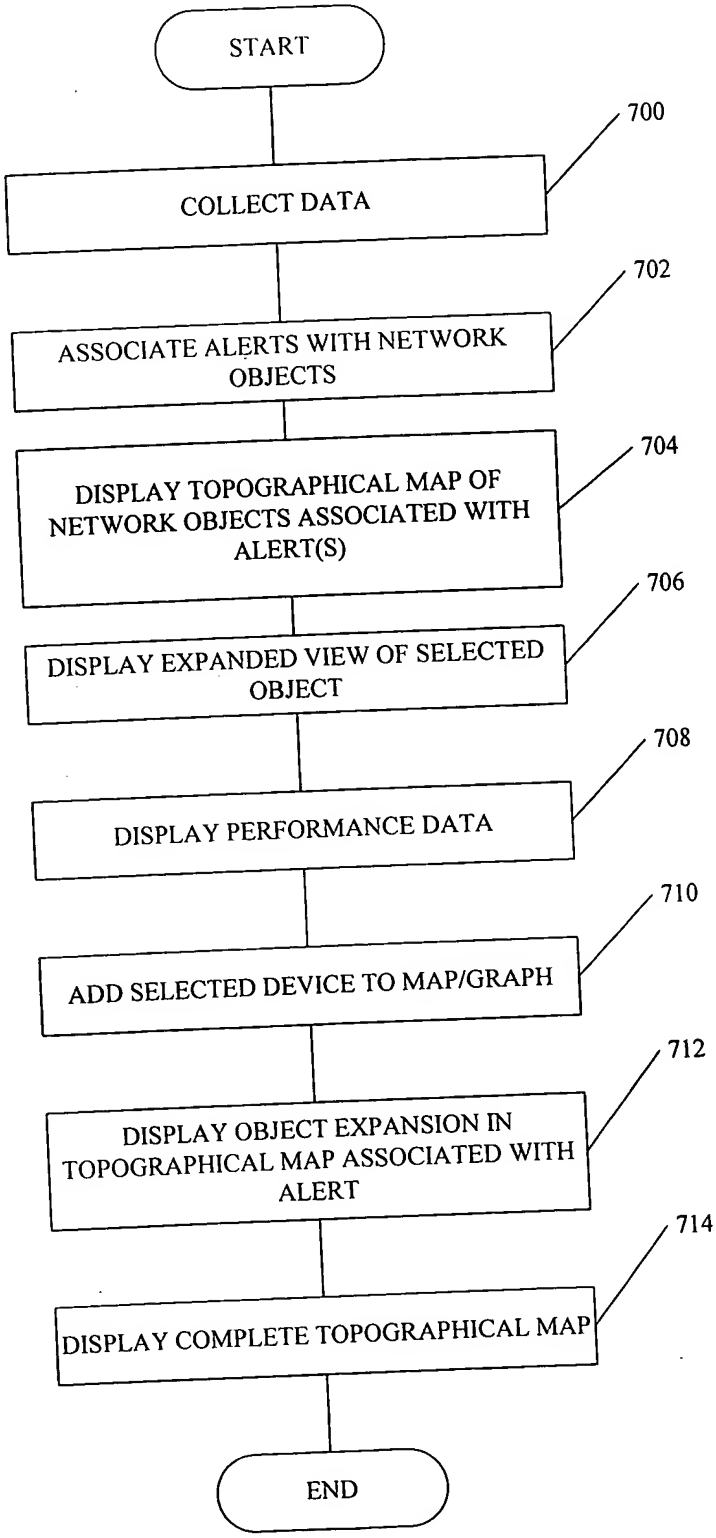

START
700
COLLECT DATA
702
ASSOCIATE ALERTS WITH NETWORK OBJECTS
704
DISPLAY TOPOGRAPHICAL MAP OF NETWORK OBJECTS ASSOCIATED WITH ALERT(S)
706
DISPLAY EXPANDED VIEW OF SELECTED OBJECT
708
DISPLAY PERFORMANCE DATA
710
ADD SELECTED DEVICE TO MAP/GRAPH
712
DISPLAY OBJECT EXPANSION IN TOPOGRAPHICAL MAP ASSOCIATED WITH ALERT
714
DISPLAY COMPLETE TOPOGRAPHICAL MAP
END

FIG. 12

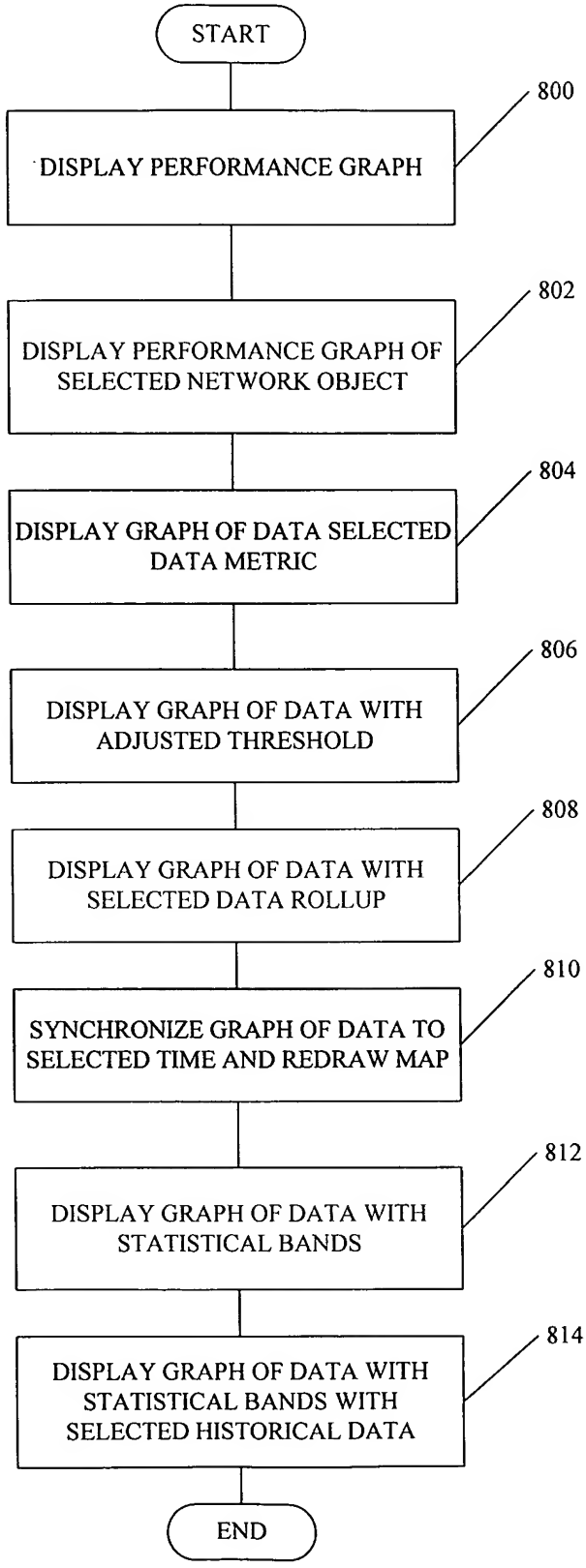

START
DISPLAY PERFORMANCE GRAPH
800
DISPLAY PERFORMANCE GRAPH OF SELECTED NETWORK OBJECT
802
DISPLAY GRAPH OF DATA SELECTED DATA METRIC
804
DISPLAY GRAPH OF DATA WITH ADJUSTED THRESHOLD
806
DISPLAY GRAPH OF DATA WITH SELECTED DATA ROLLUP
808
SYNCHRONIZE GRAPH OF DATA TO SELECTED TIME AND REDRAW MAP
810
DISPLAY GRAPH OF DATA WITH STATISTICAL BANDS
812
DISPLAY GRAPH OF DATA WITH STATISTICAL BANDS WITH SELECTED HISTORICAL DATA
814
END

FIG. 13

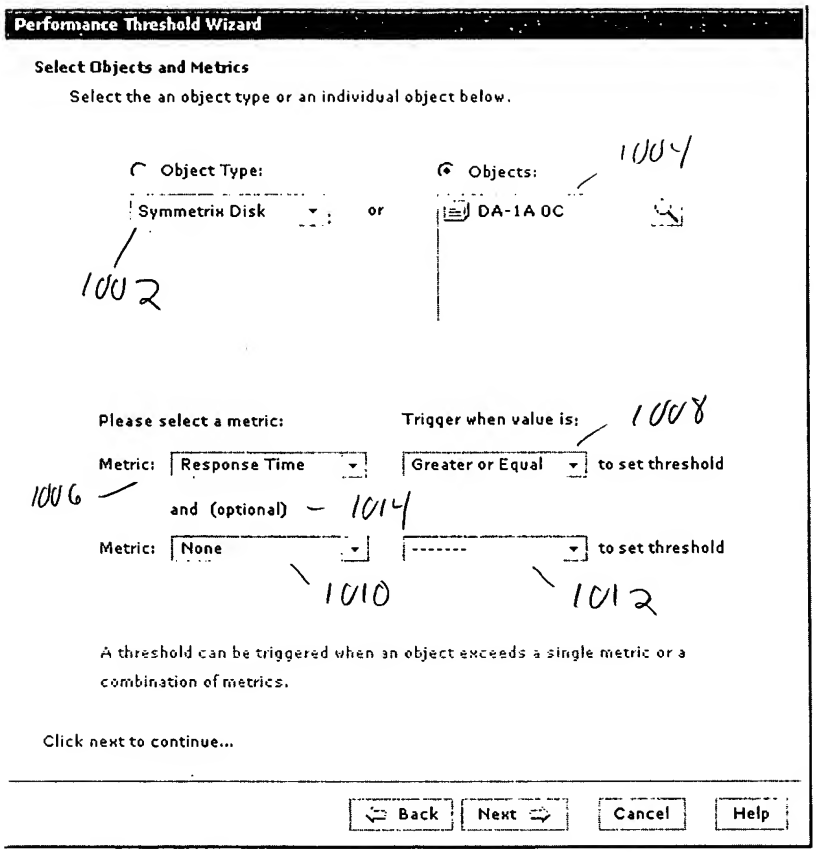

Performance Threshold Wizard
Select Objects and Metrics
Select the an object type or an individual object below.
Object Type:
Symmetrix Disk
or
Objects:
DA-1A 0C
1004
1002
Please select a metric:
Trigger when value is:
1008
Metric:
Response Time
Greater or Equal
to set threshold
1006
and (optional)
1014
Metric:
None
-------
to set threshold
1010
1012
A threshold can be triggered when an object exceeds a single metric or a combination of metrics.
Click next to continue...
Back
Next
Cancel
Help

FIG. 14

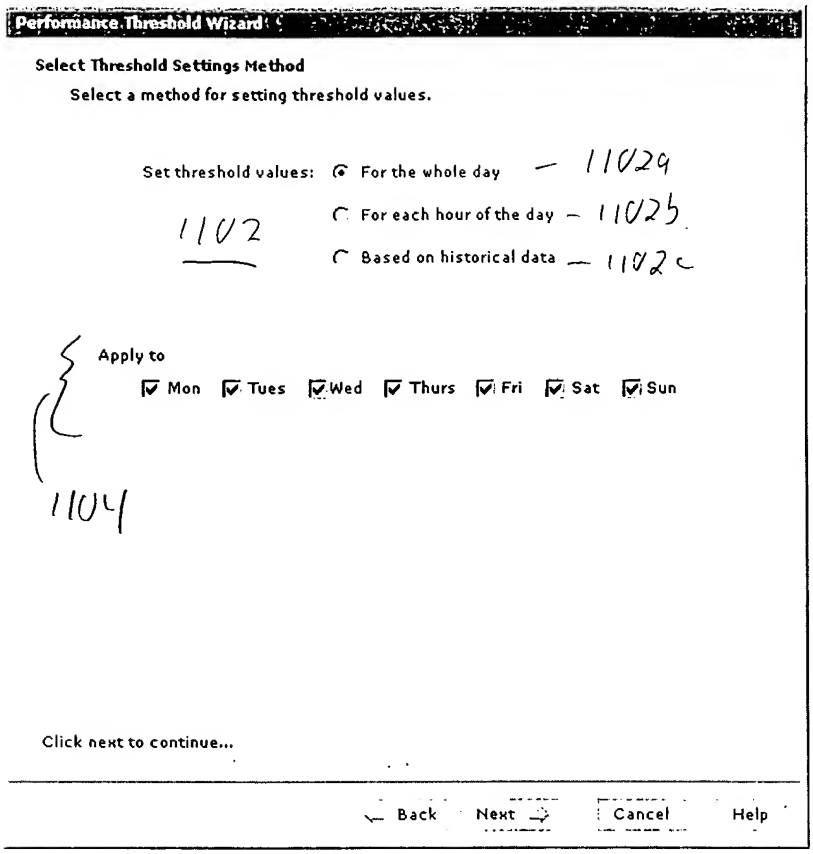

Performance Threshold Wizard
Select Threshold Settings Method
Select a method for setting threshold values.
Set threshold values:
For the whole day
For each hour of the day
Based on historical data
1102
1100
1102a
1102b
1102c
Apply to
Mon
Tues
Wed
Thurs
Fri
Sat
Sun
1104
Click next to continue...
Back
Next
Cancel
Help

FIG. 15

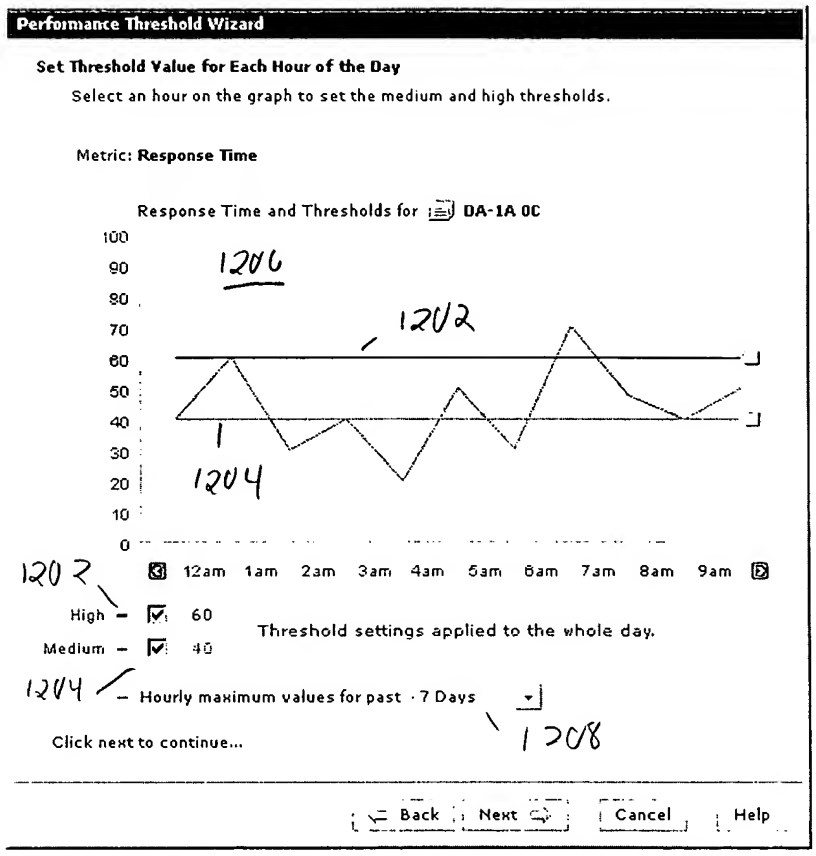

Performance Threshold Wizard
Set Threshold Value for Each Hour of the Day
Select an hour on the graph to set the medium and high thresholds.
Metric: Response Time
Response Time and Thresholds for DA-1A 0C
100
90
80
70
60
50
40
30
20
10
0
1206
1202
1204
1200
12am 1am 2am 3am 4am 5am 6am 7am 8am 9am
1202
High – 60
Medium – 40
Threshold settings applied to the whole day.
1204
– Hourly maximum values for past · 7 Days
1208
Click next to continue...
Back
Next
Cancel
Help

FIG. 16

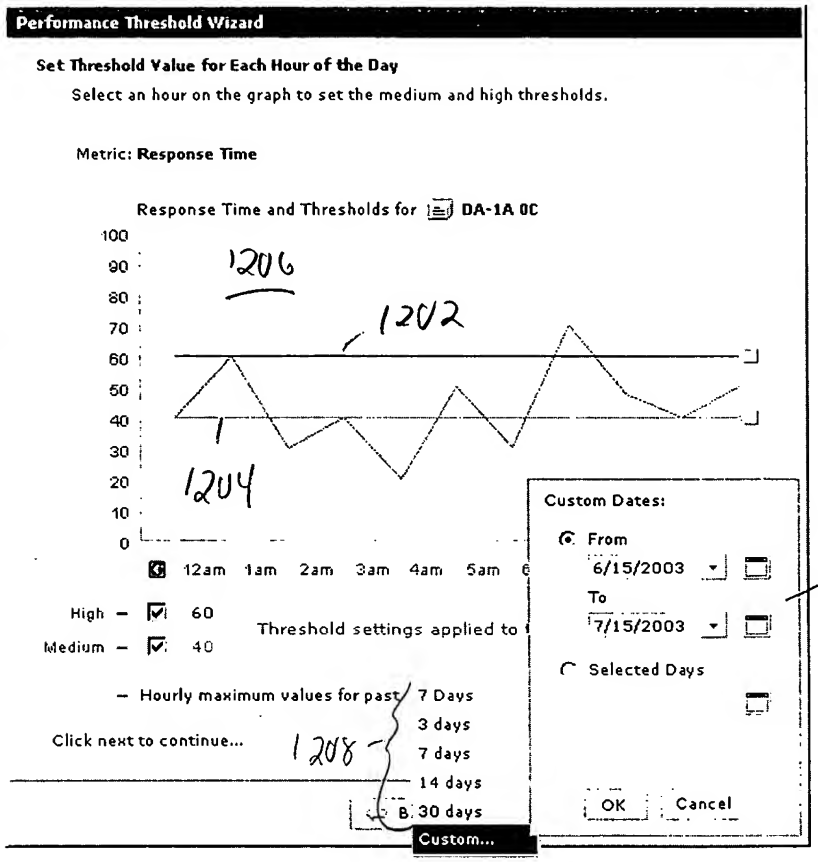

Performance Threshold Wizard
Set Threshold Value for Each Hour of the Day
Select an hour on the graph to set the medium and high thresholds.
Metric: Response Time
Response Time and Thresholds for DA-1A 0C
1200
1206
1202
1204
100
90
80
70
60
50
40
30
20
10
0
12am 1am 2am 3am 4am 5am
High – 60
Medium – 40
Threshold settings applied to
– Hourly maximum values for past
Click next to continue...
1208
7 Days
3 days
7 days
14 days
30 days
Custom...
Custom Dates:
From
6/15/2003
To
7/15/2003
Selected Days
OK
Cancel
1210

FIG. 16A

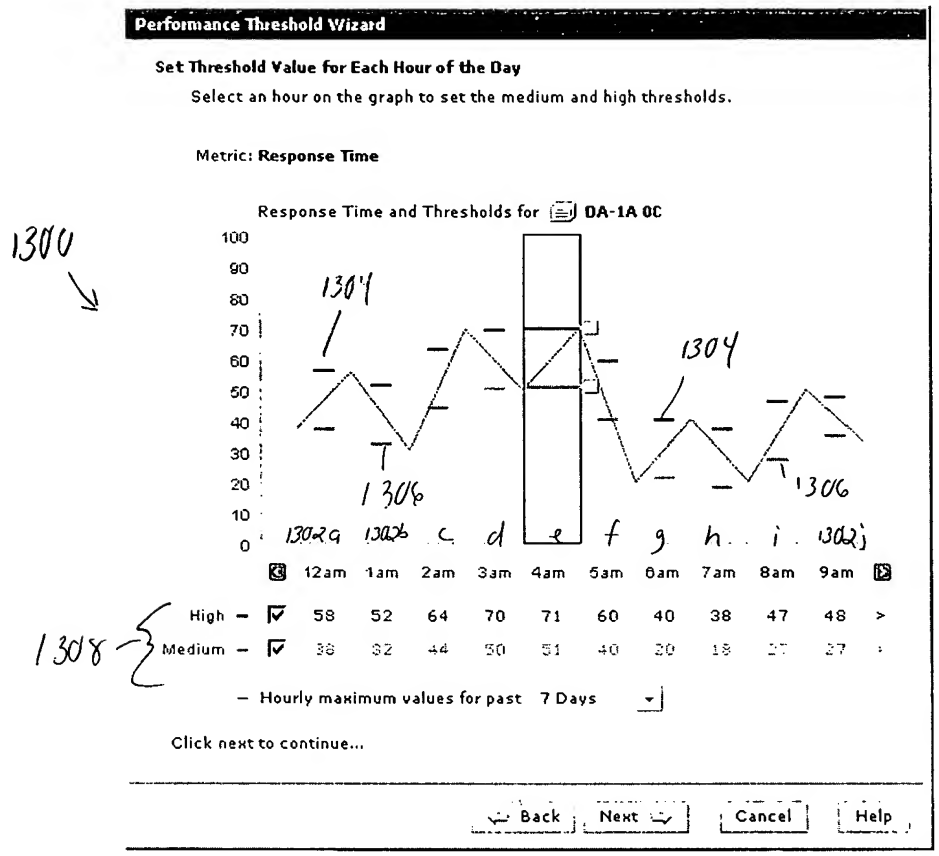

Performance Threshold Wizard
Set Threshold Value for Each Hour of the Day
Select an hour on the graph to set the medium and high thresholds.
Metric: Response Time
Response Time and Thresholds for DA-1A 0C
1300
1304
1306
1308
100
90
80
70
60
50
40
30
20
10
0
12am 1am 2am 3am 4am 5am 6am 7am 8am 9am
High 58 52 64 70 71 60 40 38 47 48
Medium 38 32 44 50 51 40 20 18 27 27
Hourly maximum values for past 7 Days
Click next to continue...
Back
Next
Cancel
Help

FIG. 17

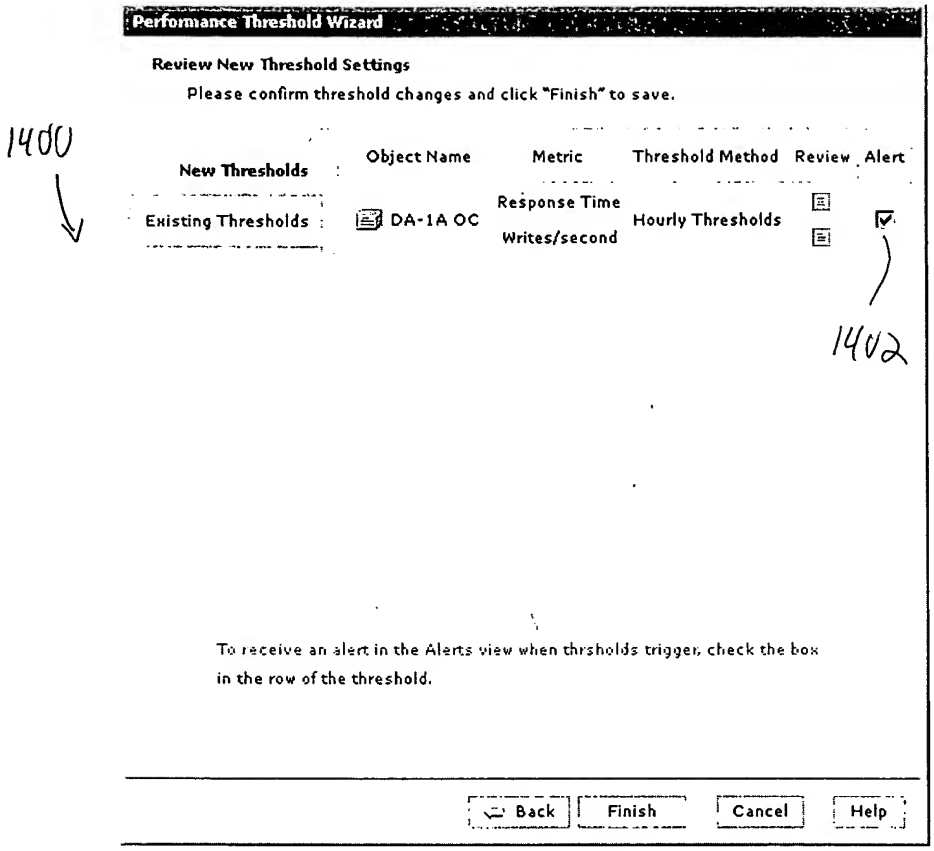

Performance Threshold Wizard
Review New Threshold Settings
Please confirm threshold changes and click "Finish" to save.
1400
New Thresholds
Existing Thresholds
Object Name
Metric
Threshold Method
Review
Alert
DA-1A OC
Response Time
Writes/second
Hourly Thresholds
1402
To receive an alert in the Alerts view when thrsholds trigger, check the box in the row of the threshold.
Back
Finish
Cancel
Help

FIG. 14